

Appendix E  
Soils Information

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit              | Soil Mapping Unit              | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|---------------------------|--------------------------------|----------------------|-------------------------------------|--|--|
| 1.01    | 123   | CT*                             | Curry I #1                | 71/85                          | Low                  | 0                                   | 5-7  | Yes  |
| 1.02    | 74    | CT*                             | Curry I #1                | 71/74                          | Low                  | 0                                   | 5-7  | Yes  |
| 1.03    | 14    | PCT                             |                           | 71/85                          | Low                  | 0                                   | 5-7  | Yes  |
| 1.04    | 4     | JR                              |                           | 71                             | Low                  | 0                                   | 5-7  | Yes  |
| 1.05    | 28    | CT*                             | Curry I #1                | 71/85                          | Low                  | 0                                   | 5-7  | Yes  |
| 1.06    | 15    | JR                              |                           | 71/74                          | Low                  | 0                                   | 5-7  | Yes  |
| 1.07    | 10    | JR                              |                           | 71/85                          | Low                  | 0                                   | 5-7  | Yes  |
| 3.01    | 200   | CT*                             | Curry I #2                | 9/71/74/77/85                  | Low                  | 0                                   | 5-7  | Yes  |
| 3.02    | 7     | PCT                             |                           | 71/85                          | Moderate             | 0                                   | 5-7  | Yes  |
| 3.03    | 22    | JR                              |                           | 71/77/85                       | Low                  | 0                                   | 5-7  | Yes  |
| 3.04    | 9     | PCT                             |                           | 71/77/85                       | Low-Moderate         | 0                                   | 5-7  | Yes  |
| 3.05    | 7     | PCT                             |                           | 71/85                          | Low-Moderate         | 0                                   | 5-7  | Yes  |
| 4.01    | 47    | CT*                             | Curry I #3                | 9/68/77/85                     | Low-Moderate         | 4                                   | 9-11   | Yes  |
| 4.02    | 480   | CT*                             | Curry I #3 & Curry I #4   | 8/8X/9/9X/68/71/71C74/74/77/85 | Low-Moderate         | 4                                   | 9-11   | Yes  |
| 4.03    | 7     | PCT                             |                           | 8X/9/68/71C74                  | Low                  |                                     |  |  |
| 4.05    | 3     | JR                              |                           | 58                             | Moderate             |                                     |  |  |
| 4.06    | 94    | CT                              | Curry II #5 & Curry II #6 | 71/77                          | Low                  | 3-6**                               | 8-13   | Yes  |
| 4.07    | 5     | JR                              |                           | 68/71C74                       | Low-Moderate         |                                     |  |  |
| 5.01    | 113   | PCT                             |                           | 7/8/9/68                       | Low-Moderate         |                                     |  |  |
| 5.02    | 150   | IT*                             | Curry II #19              | 9/68/71/77                     | Low-Moderate         | 5                                   | 10-12  | Yes  |
| 5.03    | 50    | PCT                             |                           | 7/9/68/71                      | Low-Moderate         |                                     |  |  |

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|---------|-------|---------------------------------|----------------------------|-------------------|----------------------|-------------------------------------|--|--|
| 5.04    | 113   | CT*                             | Curry II #6 & Curry II #15 | 7/68/71/74C85/77  | Low-Moderate         | 4-6**                               | 9-13   | Yes  |
| 5.05    | 11    | CT*                             | Curry II #6                | 71                | Low-Moderate         | 4-6**                               | 9-13   | Yes  |
| 5.06    | 67    | PCT                             |                            | 68/71/74C85/77    | Low-Moderate         |                                     |  |  |
| 5.07    | 102   | CT                              |                            | 68/71/74C85       | Low-Moderate         | ****                                |  |  |
| 5.08    | 141   | CT                              | Curry II #6 & Curry II #7  | 68/71/74/77       | Low-Moderate         | 3-6**                               | 8-13   | Yes  |
| 5.09    | 206   | CT                              | Curry II #7                | 68/71/74C85/77    | Low-Moderate         | 3-5**                               | 8-11   | Yes  |
| 5.1     | 116   | CT                              | Curry I #4                 | 71/74/77          | Low                  | < 13                                | < 20   | Yes  |
| 5.11    | 59    | CT                              | Curry II #7                | 68/74C85/77       | Low-Moderate         | 3-5**                               | 8-11   | Yes  |
| 6.01    | 101   | CT*                             | Curry II #8                | 3/71C81/74C85     | Low-Moderate         | 3-5**                               | 8-11   | Yes  |
| 6.02    | 63    | PCT                             |                            | 71C74/71C81/74C85 | Low-Moderate         |                                     |  |  |
| 6.03    | 37    | CT*                             | Curry II #9                | 3/71C74/74C85     | Low-Moderate         | 3-11**                              | 8-18   | Yes  |
| 6.04    | 39    | PCT                             |                            | 3/71C74/74C85     | Low-Moderate         |                                     |  |  |
| 6.05    | 133   | CT                              | Curry II #13               | 71C74/74C85/77    | Low                  | 3                                   | 8-10   | Yes  |
| 6.06    | 158   | CT*                             | Curry II #13               | 71C74/74C85/77    | Low                  | 3                                   | 8-10   | Yes  |
| 6.07    | 27    | PCT                             |                            | 71C74/74C85       | Low                  |                                     |  |  |
| 6.08    | 11    | JR                              |                            | 71C74             | Low                  |                                     |  |  |
| 6.09    | 94    | CT*                             | Curry II #9                | 71C74/71C81       | Low-Moderate         | 3-11**                              | 8-18   | Yes  |
| 6.1     | 108   | CT                              | Curry II #9                | 3/71C74/71C81     | Low-Moderate         | 3-11**                              | 8-18   | Yes  |
| 6.11    | 10    | JR                              |                            | 71C81             | Low                  |                                     |  |  |
| 6.12    | 7     | CT                              | Curry II #9                |                   | Low-Moderate         | 3-11**                              | 8-18   | Yes  |
| 6.13    | 19    | CT*                             | Curry II #12               | 71C74/71C81       | Low-Moderate         | 14                                  | 19-21  | No   |
| 6.14    | 43    | CT                              | Curry II #12               | 71C74/71C81/77    | Low-Moderate         | 14                                  | 19-21  | No   |
| 6.15    | 11    | PCT                             |                            | 71C74/71C81       | Low-Moderate         |                                     |  |  |
| 6.16    | 48    | CT                              | Curry II #12               | 71C74/71C81/77    | Low-Moderate         | 14                                  | 19-21  | No   |
| 6.17    | 148   | CT                              | Curry II #11               | 71C74/71C81/77    | Low-Moderate         | 4                                   | 9-11   | Yes  |
| 6.18    | 9     | PCT                             |                            | 71C74/71C81/74C85 | Low-Moderate         | < 10                                | < 17   | Yes  |
| 6.19    | 44    | PCT                             |                            | 71C74/74C85/77    | Low                  |                                     |  |  |

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|---------|-------|---------------------------------|---------------|-------------------|----------------------|-------------------------------------|--|--|
| 6.2     | 60    | CT*                             | Curry II #10  | 71C74/77          | Low                  | 3-11**                              | 8-18   | Yes  |
| 6.21    | 3     | JR                              |               | 71C74             | Low                  |                                     |  |  |
| 6.22    | 18    | CT*                             | Curry II #10  | 71C74/77          | Low                  | 3-11**                              | 8-18   | Yes  |
| 6.23    | 11    | JR                              |               | 71C74/77          | Low                  |                                     |  |  |
| 6.24    | 55    | PCT                             |               | 71C74             | Low                  |                                     |  |  |
| 6.25    | 44    | CT                              | Curry II #10  | 71C74/77          | Low                  | 3-11**                              | 8-18   | Yes  |
| 6.26    | 25    | PCT                             |               | 71C74/74C85/77    | Low-Moderate         | < 10                                | < 17   | Yes  |
| 6.27    | 33    | CT                              | Curry II #8   | 71C81/74C85       | Low-Moderate         | 3-5**                               | 8-12   | Yes  |
| 6.28    | 9     | JR                              |               | 71C74             | Low                  |                                     |  |  |
| 6.29    | 30    | CT*                             |               | 3/71C74           | Low                  | ****                                |  |  |
| 6.3     | 34    | CT*                             |               | 71C81             | Low-Moderate         | ****                                |  |  |
| 6.31    | 15    | JR                              |               |                   | Low-Moderate         |                                     |  |  |
| 7.01    | 83    | CT*                             | Curry II #14  | 71C74/74C85       | Low-Moderate         | 2-4**                               | 7-11   | Yes  |
| 7.02    | 23    | CT                              | Curry II #14  | 71C74/74C85       | Low-Moderate         | 2-4**                               | 7-11   | Yes  |
| 7.03    | 65    | CT*                             | Curry II #14  | 71C74/74C85       | Low-Moderate         | 4-6**                               | 9-13   | Yes  |
| 7.04    | 28    | PCT                             |               | 3/71C74/74C85     | Low-Moderate         | < 11                                | < 18   | Yes  |
| 7.05    | 37    | CT                              | Curry II #14  | 3/71C74/74C85     | Low-Moderate         | 2-6**                               | 7-13   | Yes  |
| 7.06    | 61    | CT*                             | Curry II #14  | 71C74/74C85       | Low-Moderate         | 2-6**                               | 7-13   | Yes  |
| 8.01    | 93    | CT                              | Curry II #16  | 71/74C85          | Low                  | 3-4**                               | 8-11   | Yes  |
| 8.02    | 71    | CT*                             | Curry II #16  | 71/77             | Low                  | 3-4**                               | 8-11   | Yes  |
| 8.03    | 22    | CT                              | Curry II #16  | 71C81             | Moderate             | 3                                   | 8-10   | Yes  |
| 8.04    | 56    | PCT                             |               | 71/77             | Low                  |                                     |  |  |
| 8.05    | 53    | CT                              | Curry II #17  | 71                | Moderate             | 2-4**                               | 7-11   | Yes  |
| 8.06    | 101   | CT                              | Curry II #17  | 71/71C81/74C85    | Low-Moderate         | 4                                   | 9-11   | Yes  |
| 8.07    | 124   | PCT                             |               | 71/71C81/74C85    | Low-Moderate         |                                     |  |  |
| 8.08    | 109   | PCT                             |               | 71/77             | Moderate             | < 11                                | < 18   | Yes  |
| 8.09    | 9     | PCT                             |               | 71                | Moderate             | 6                                   | 11-13  | Yes  |
| 8.1     | 5     | PCT                             |               | 71/77             | Moderate             |                                     |  |  |
| 8.11    | 104   | PCT                             |               | 71/71C81/74C85    | Low-Moderate         |                                     |  |  |
| 8.12    | 57    | PCT                             |               | 7/74C85/77        | Low-Moderate         |                                     |  |  |
| 9.01    | 55    | IT*                             | Curry III #18 | 3/7/71C74/77/7C8  | Low                  | 8                                   | 13-15  | Yes  |

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| 9.02    | 65    | IT*                             | Curry III #18                 | 71C74/74C85/77        | Low                  | 8                                   | 13-15  | Yes  |
| 9.03    | 71    | CT                              | Curry III #18                 | 3/71C74/74C85/77      | Low                  | 8                                   | 13-15  | Yes  |
| 9.04    | 89    | CT*                             | Curry III #18                 | 1/3/71C74/74C85/77    | Low                  | 8                                   | 13-15  | Yes  |
| 9.05    | 33    | CT                              | Curry III #18                 | 71C74/74C85           | Low                  | 8                                   | 13-15  | Yes  |
| 10.01   | 35    | CT*                             | Curry III #20                 | 3/71C74/74C85/77      | Low                  | 9-10**                              | 14-17  | Yes  |
| 10.02   | 40    | IT*                             | Curry III #20                 | 74C85                 | Low                  | 9-10**                              | 14-17  | Yes  |
| 10.03   | 58    | IT*                             | Curry III #20                 | 7/74C85/77/8          | Low                  | 9-10**                              | 14-17  | Yes  |
| 10.04   | 49    | IT*                             | Curry III #20                 | 7/77/7C8/8            | Low                  | 9-10**                              | 14-17  | Yes  |
| 10.05   | 95    | IT*                             | Curry III #21                 | 7/71C74/71C81/74C85/8 | Low                  | 11                                  | 18   | Yes  |
| 10.06   | 41    | CT*                             | Curry III #21                 | 71C74/74C85           | Low                  | 11                                  | 18   | Yes  |
| 10.07   | 67    | CT*                             | Curry III #22                 | 71C74/77              | Moderate             | 8                                   | 13-15  | Yes  |
| 10.08   | 15    | PCT                             |                               | 71C74                 | Low                  |                                     |  |  |
| 10.09   | 34    | PCT                             |                               | 71C74/77              | Low                  |                                     |  |  |
| 10.1    | 5     | PCT                             |                               | 71C74                 | Low                  |                                     |  |  |
| 10.11   | 3     | PCT                             |                               | 71C74                 | Low                  |                                     |  |  |
| 10.12   | 7     | IT*                             | Curry III #20                 | 74C85                 | Low                  | 9-10**                              | 14-17  | Yes  |
| 10.13   | 4     | CT                              |                               | 71C74                 | Low                  | ****                                |  |  |
| 11.01   | 119   | CT                              | Curry III #22 & Curry III #23 | 3/71C74/77            | Low                  | 3-8**                               | 8-15   | Yes  |
| 11.02   | 118   | CT                              | Curry III #23                 | 3/71C74/71C81         | Low                  | 3                                   | 8-10   | Yes  |
| 11.03   | 31    | JR                              |                               | 3/71C81               | Low-Moderate         |                                     |  |  |
| 11.04   | 117   | CT*                             | Curry III #23                 | 71C74/71C81/74        | Low-Moderate         | 3                                   | 8-10   | Yes  |
| 11.05   | 7     | JR                              |                               | 71C81                 | Low-Moderate         |                                     |  |  |
| 11.06   | 31    | JR                              |                               | 71C81/74              | Low-Moderate         |                                     |  |  |
| 11.07   | 108   | PCT                             |                               | 3/71C74/71C81/7X/8    | Low-Moderate         |                                     |  |  |
| 11.08   | 61    | CT*                             | Curry III #24                 | 7/71C81/7X/8          | Low                  | 24                                  | 29-31  | No   |
| 11.09   | 74    | CT*                             | Curry III #24                 | 71C81/74/7X/8         | Low                  | 24                                  | 29-31  | No   |
| 11.1    | 134   | PCT                             |                               | 71C81/74/7X/8         | Low                  |                                     |  |  |

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| 11.10a  | 12    | CT                              |               | 71C81/74/7X/8       | Low                  | ****                                |  |  |
| 11.11   | 36    | CT*                             | Curry III #26 | 7X/8                | Low                  | 8                                   | 13-15  | Yes  |
| 11.12   | 67    | CT*                             | Curry III #26 | 7/71C81/8           | Low                  | 8                                   | 13-15  | Yes  |
| 11.13   | 11    | PCT                             |               | 3/71C74/71C81       | Low-Moderate         |                                     |  |  |
| 11.14   | 7     | PCT                             |               | 71C74               | Low                  |                                     |  |  |
| 11.15   | 12    | CT*                             | Curry III #28 |                     | Low                  | < 13                                | < 20   | Yes  |
| 12.01   | 57    | CT*                             | Curry III #27 | 7X/8X               | Low                  | 13                                  | < 20   | Yes  |
| 12.02   | 60    | CT*                             | Curry III #27 | 7/7X/8/8X           | Low                  | 13                                  | < 20   | Yes  |
| 12.03   | 40    | CT*                             |               | 7/7X/8X             | Low-Moderate         | < 10                                | < 17   | Yes  |
| 13.01   | 54    | CT                              | Curry IV #13  | 7/71C81             | Low                  | < 12                                | < 19   | Yes  |
| 13.02   | 17    | CT                              | Curry IV #13  | 7/71C81             | Low                  | < 11                                | < 18   | Yes  |
| 13.03   | 49    | CT*                             | Curry IV #13  | 7/71C81             | Low-Moderate         | 0                                   | 5-7  | Yes  |
| 13.04   | 19    | CT*                             | Curry IV #13  | 7/71C81/77          | Low                  | 0                                   | 5-7  | Yes  |
| 14.01   | 214   | CT                              | Curry IV #10  | 71/77/8/85C87       | Low                  | < 12                                | < 19   | Yes  |
| 14.02   | 26    | JR                              |               | 71/71C81/77/8       | Low-Moderate         |                                     |  |  |
| 14.03   | 145   | CT                              | Curry IV #10  | 7/71/71C81/77/85C87 | Low                  | < 12                                | < 19   | Yes  |
| 15.01   | 24    | CT                              | Curry IV #12  | 7/71/8              | Low-Moderate         | < 12                                | < 19   | Yes  |
| 15.02   | 38    | CT                              | Curry IV #12  | 7/71/8              | Moderate             | < 12                                | < 19   | Yes  |
| 15.03   | 41    | CT                              | Curry IV #11  | 71/8                | Moderate             | < 13                                | < 20   | Yes  |
| 16.01   | 57    | JR                              |               | 8/81C85/85C87       | Low-Moderate         |                                     |  |  |
| 16.02   | 62    | PCT                             |               | 8/81C85/85C87       | Low-Moderate         |                                     |  |  |
| 16.03   | 4     | PCT                             |               | 81C85/85C87         | Low-Moderate         |                                     |  |  |
| 16.04   | 6     | JR                              |               | 81C85/85C87         | Low-Moderate         |                                     |  |  |
| 16.05   | 1     | JR                              |               | 81C85               | Low-Moderate         |                                     |  |  |
| 16.06   | 3     | JR                              |               | 8/85C87             | Low-Moderate         |                                     |  |  |
| 16.07   | 65    | JR                              |               | 68/71/8/81C85/85C87 | Low-Moderate         |                                     |  |  |
| 16.08   | 129   | JR                              |               | 81C85/85C87         | Low-Moderate         |                                     |  |  |
| 17.01   | 85    | CT*                             |               | 41/43C44/71C74      | Moderate             | < 10                                | < 17   | Yes  |
| 17.02   | 62    | PCT                             |               | 43C44/7/71C74       | Moderate             | < 12                                | < 19   | Yes  |

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| 17.03   | 8     | IT*                             | Burnt 1      | 3/41/43C44        | Low-Moderate         | 5                                   | 10-12  | Yes  |
| 17.04   | 36    | -                               |              |                   | Moderate             | 8                                   | 13-15  | Yes  |
| 17.05   | 34    | CT                              | Burnt 2      | 43C44/7/71C74     | Moderate             | 3                                   | 8-10   | Yes  |
| 17.06   | 5     | JR                              |              | 71C74             | Low-Moderate         | < 10                                | < 17   | Yes  |
| 17.07   | 8     | PCT                             |              | 7/71C74           | Moderate             | < 10                                | < 17   | Yes  |
| 17.08   | 15    | IT*                             |              | 7/71C74           | Low                  | < 10                                | < 17   | Yes  |
| 17.09   | 16    | PCT                             |              | 71C74             | Low-Moderate         | < 10                                | < 17   | Yes  |
| 17.1    | 1     | IT                              |              | 43C44/71C74       | Low                  | ****                                |  |  |
| 17.11   | 32    | CT                              | Burnt 1      | 3/41/81C85        | Low-Moderate         | 5                                   | 10-12  | Yes  |
| 18.01   | 38    | CT*                             | Burnt 3      | 3/81C85           | Moderate             | 19                                  | 24-26  | No   |
| 18.02   | 10    | PCT                             |              | 65/81C85          | Moderate             | < 11                                | < 18   | Yes  |
| 18.03   | 96    | IT*                             |              | 65/71/81C85       | Low                  | < 10                                | < 17   | Yes  |
| 18.04   | 35    | IT*                             |              | 65/71/81C85/9     | Moderate             | < 10                                | < 17   | Yes  |
| 18.05   | 60    | CT                              |              | 71                | Moderate             | < 10                                | < 17   | Yes  |
| 18.07   | 33    | CT                              |              | 71/9              | Low                  | 9                                   | 14-16  | Yes  |
| 18.08   | 31    | PCT                             |              | 7/71/81C85/9      | Low-Moderate         |                                     |  |  |
| 19.01   | 30    | CT                              | Burnt 8      | 65/71             | Moderate             | 8                                   | 13-15  | Yes  |
| 19.02   | 54    | PCT                             |              | 65/71             | Moderate             | 9                                   | 14-16  | Yes  |
| 19.03   | 46    | CT*                             |              | 71                | Moderate             | <12                                 | < 19   | Yes  |
| 19.04   | 82    | CT*                             | Burnt 8      | 65/71/74          | Moderate             | 8                                   | 13-15  | Yes  |
| 19.05   | 15    | CT*                             | Burnt 9      | 71/74C77          | Low                  | <12**                               | < 19   | Yes  |
| 19.06   | 56    | IT*                             | Burnt 6      | 3/65/71/73        | Low-Moderate         | 3                                   | 8-10   | Yes  |
| 19.07   | 81    | CT*                             |              | 71/73/74C77       | Low-Moderate         | < 12                                | < 19   | Yes  |
| 19.08   | 37    | PCT                             |              | 71/74C77          | Low-Moderate         | < 13                                | < 20   | Yes  |
| 19.09   | 48    | CT*                             |              | 65/71/74          | Low-Moderate         | ****                                |  |  |
| 20.01   | 52    | CT*                             |              | 65/71/74          | Low-Moderate         | ****                                |  |  |
| 20.02   | 131   | CT*                             | Burnt 5      | 3/71/74           | Moderate             | 10                                  | 15-17  | Yes  |
| 20.03   | 39    | CT*                             | Burnt 5      | 3/71/74C77        | Low                  | 2-10**                              | 7-17   | Yes  |
| 20.04   | 47    | PCT                             |              | 71/74/74C77       | Moderate             | < 12                                | < 19   | Yes  |
| 20.05   | 52    | CT*                             | Burnt 4      | 71/74C77/9        | Low                  | < 12**                              | < 19   | Yes  |
| 20.06   | 14    | CT*                             |              | 71/9              | Low                  | ****                                |  |  |

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| 20.07   | 19    | PCT                             |              | 71/9                 | Low                  | < 10                                | < 17   | Yes  |
| 20.08   | 41    | CT                              |              | 71/74                | Low-Moderate         | ****                                |  |  |
| 21.01   | 35    | CT                              | Burnt 13     | 71/74                | Low-Moderate         | < 11                                | < 18   | Yes  |
| 21.02   | 28    | CT*                             | Burnt 13     | 68/71/74             | Low-Moderate         | < 11                                | < 18   | Yes  |
| 21.03   | 13    | CT*                             |              | 68/71/74/74C77       | Low-Moderate         | ****                                |  |  |
| 21.04   | 31    | PCT                             |              | 68/71/74             | Low                  | < 11                                | < 18   | Yes  |
| 21.05   | 57    | CT*                             | Burnt 12     | 71/74                | Moderate             | 4                                   | 9-11   | Yes  |
| 21.06   | 86    | CT*                             | Burnt 12     | 68/71                | Moderate             | 4                                   | 9-11   | Yes  |
| 21.07   | 27    | CT*                             | Burnt 10     | 71/74C77             | Moderate             | < 12                                | < 19   | Yes  |
| 21.08   | 55    | CT*                             | Burnt 11     | 68/71                | Low                  | 4-8**                               | 9-15   | Yes  |
| 21.09   | 32    | CT*                             | Burnt 11     | 71/74                | Low                  | 8                                   | 13-15  | Yes  |
| 21.1    | 49    | CT*                             |              | 68/71/73/74          | Low                  | ****                                |  |  |
| 21.11   | 31    | CT*                             |              | 68/71/74C77          | Low-Moderate         | < 12                                | < 19   | Yes  |
| 21.12   | 25    | JR                              |              | 71/74C77             | Low                  |                                     |  |  |
| 22.01   | 100   | IT*                             |              | 65/71/73/9/9X        | Low-Moderate         | ****                                |  |  |
| 22.02   | 103   | IT*                             | Burnt 7      | 65/71/73/81C85       | Low-Moderate         | < 12                                | < 19   | Yes  |
| 22.03   | 11    | PCT                             |              | 65/81C85             | Low-Moderate         |                                     |  |  |
| 22.04   | 30    | IT*                             | Mud #25      | 65/81C85             | Low-Moderate         | < 12                                | < 19   | Yes  |
| 22.05   | 35    | IT*                             | Mud #25      | 65/81C85             | Low-Moderate         | < 12                                | < 19   | Yes  |
| 22.06   | 69    | PCT                             |              | 65/73/81C85          | Low-Moderate         |                                     |  |  |
| 23.01   | 128   | CT                              | Mud #22      | 43C44/46C47/65/81C85 | Low                  | < 13                                | < 20   | Yes  |
| 23.02   | 17    | IT*                             | Mud #21      | 65                   | Low-Moderate         | < 11                                | < 18   | Yes  |
| 23.03   | 57    | IT*                             | Mud #20      | 65/81C85             | Low                  | < 10                                | < 17   | Yes  |
| 23.04   | 26    | IT*                             | Mud #20      | 81C85/85C87          | Low                  | < 10                                | < 17   | Yes  |
| 23.05   | 6     | JR                              |              | 81C85                | Low-Moderate         |                                     |  |  |
| 23.06   | 33    | IT*                             | Mud #21      | 65/81C85/85C87       | Low-Moderate         | 6                                   | 11-13  | Yes  |
| 23.07   | 95    | IT*                             | Mud #21      | 43C44/65/81C85       | Low                  | 8                                   | 13-15  | Yes  |
| 24.01   | 45    | IT*                             |              | 65/71/81C85          | Low                  | < 12                                | < 19   | Yes  |
| 24.02   | 39    | PCT                             |              | 65/81C85             | Moderate             |                                     |  |  |
| 24.03   | 23    | IT*                             | Mud #25      | 65/81C85             | Low-Moderate         | < 12                                | < 19   | Yes  |

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit | Soil Mapping Unit         | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|--------------|---------------------------|----------------------|-------------------------------------|--|--|
| 24.04   | 117   | IT*                             |              | 81C85                     | Low-Moderate         | < 12                                | < 19   | Yes  |
| 24.05   | 28    | IT*                             | Mud #24      | 81C85                     | Low                  | 2                                   | 7-9  | Yes  |
| 24.06   | 33    | IT*                             | Mud #24      | 3/81C85                   | Low-Moderate         | 8                                   | 13-15  | Yes  |
| 24.07   | 14    | IT*                             | Mud #24      | 3/81C85                   | Low-Moderate         | < 12                                | < 19   | Yes  |
| 24.08   | 16    | IT*                             | Mud #24      | 3/81C85                   | Low-Moderate         | < 12                                | < 19   | Yes  |
| 24.09   | 46    | IT*                             | Burnt 3      | 3/81C85                   | Moderate             | 19                                  | 24-26  | No   |
| 24.11   | 125   | IT*                             |              | 3/41/43C44/46C47/65/81C85 | Low                  | < 12                                | < 19   | Yes  |
| 24.12   | 57    | PCT                             |              | 65/81C85                  |                      |                                     |  |  |
| 24.13   | 7     | IT*                             | Mud #23      | 81C85                     | Low                  | < 12                                | < 19   | Yes  |
| 24.14   | 20    | PCT                             |              | 65/81C85                  | Low-Moderate         |                                     |  |  |
| 24.15   | 16    | JR                              |              | 43C44/46C47/81C85         | Moderate             | < 11                                | < 18   | Yes  |
| 24.16   | 2     | JR                              |              | 46C47/81C85               | Moderate             | < 11                                | < 18   | Yes  |
| 24.17   | 6     | PCT                             | Burnt 1      | 46C47/81C85               | Low-Moderate         | 5                                   | 10-12  | Yes  |
| 24.18   | 19    | CT                              | Burnt 1      | 41/46C47/81C85            | Low-Moderate         | 5                                   | 10-12  | Yes  |
| 24.19   | 6     | JR                              |              | 46C47                     | Moderate             | < 10                                | < 17   | Yes  |
| 24.2    | 1     | IT*                             |              | 41/43C44/46C47            | Low                  | ****                                |  |  |
| 24.21   | 40    | PCT                             |              | 43C44/46C47/65            | Moderate             | < 11                                | < 18   | Yes  |
| 24.22   | 4     | JR                              |              | 43C47                     | Low-Moderate         | < 11                                | < 18   | Yes  |
| 24.23   | 11    | JR                              |              | 43C44/46C47               | Low-Moderate         | < 11                                | < 18   | Yes  |
| 24.24   | 10    | PCT                             |              | 43C44/46C47/65            | Low-Moderate         | < 12                                | < 19   | Yes  |
| 24.25   | 73    | IT*                             | Mud #17      | 65/81C85                  | Low                  | < 12                                | < 19   | Yes  |
| 24.26   | 287   | IT*                             |              | 65/71/81C85               | Low                  | < 12                                | < 19   | Yes  |
| 24.27   | 50    | IT*                             | Mud #18      | 65/81C85                  | Low-Moderate         | 9                                   | 14-16  | Yes  |
| 24.28   | 34    | PCT                             |              | 65                        | Moderate             |                                     |  |  |
| 24.29   | 87    | CT*                             | Mud #19      | 65/81C85                  | Low                  | < 13                                | < 20   | Yes  |
| 24.3    | 38    | PCT                             |              | 81C85                     | Moderate             |                                     |  |  |
| 24.31   | 3     | PCT                             | Mud #19      | 81C85                     | Low-Moderate         |                                     |  |  |
| 24.32   | 52    | IT*                             | Mud #19      | 81C85                     | Low-Moderate         | < 11                                | < 18   | Yes  |
| 24.33   | 13    | IT*                             | Mud #24      | 81C85                     | Low-Moderate         | < 12                                | < 19   | Yes  |



| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit | Soil Mapping Unit | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|--------------|-------------------|----------------------|-------------------------------------|--|--|
| 24.34   | 10    | PCT                             |              | 65                | Moderate             | 3                                   | 8-10   | Yes  |
| 24.35   | 24    | PCT                             |              | 65                | Moderate             | < 10                                | < 17   | Yes  |
| 24.36   | 39    | PCT                             |              | 65/81C85          | Moderate             |                                     |  |  |
| 24.37   | 15    | IT*                             | Mud #19      | 65/81C85          | Moderate             | < 13                                | < 20   | Yes  |
| 24.38   | 27    | PCT                             |              | 65                | Moderate             | 5                                   | 10-12  | Yes  |
| 24.39   | 25    | IT*                             |              | 65/81C85          | Moderate             | < 10                                | < 17   | Yes  |
| 24.4    | 9     | JR                              |              | 65/81C85          | Low-Moderate         |                                     |  |  |
| 24.41   | 25    | IT*                             | Mud #18      | 65/81C85          | Low-Moderate         | < 10                                | < 17   | Yes  |
| 24.42   | 28    | IT*                             |              | 65/81C85          | Low-Moderate         | 3                                   | 8-10   | Yes  |
| 24.43   | 44    | IT*                             | Mud #17      | 65/71             | Low-Moderate         | < 12                                | < 19   | Yes  |
| 24.44   | 60    | IT*                             | Mud #17      | 65/71/74          | Low-Moderate         | 3                                   | 8-10   | Yes  |
| 24.45   | 33    | IT*                             |              | 81C85             | Low-Moderate         | < 12                                | < 19   | Yes  |
| 24.46   | 21    | IT*                             |              | 81C85             | Low-Moderate         | < 11                                | < 18   | Yes  |
| 24.47   | 51    | IT*                             | Mud #16      | 81C85             | Low-Moderate         | < 11                                | < 18   | Yes  |
| 24.48   | 10    | JR                              |              | 81C85             | Low-Moderate         |                                     |  |  |
| 24.49   | 19    | CT                              | Mud #16      | 81C85             | Low-Moderate         | < 10                                | < 17   | Yes  |
| 24.51   | 23    | CT                              | Mud #16      | 81C85             | Low                  | < 10                                | < 17   | Yes  |
| 24.52   | 15    | IT*                             |              | 46C81/81C85       | Low-Moderate         | < 11                                | < 18   | Yes  |
| 24.53   | 42    | IT*                             | Mud #15      | 65/81C85          | Low-Moderate         | < 10                                | < 17   | Yes  |
| 24.54   | 8     | IT*                             | Mud #15      | 65/81C85          | Low-Moderate         | < 10                                | < 17   | Yes  |
| 24.55   | 20    | IT*                             | Mud #15      | 48/65/81C85       | Low                  | < 11                                | < 18   | Yes  |
| 24.56   | 52    | IT*                             | Mud #15      | 46C81/48/81C85    | Low                  | ****                                |  |  |
| 24.57   | 68    | IT*                             | Mud #15      | 42/46C81/48/65    | Low                  | < 11                                | < 18   | Yes  |
| 25.01   | 22    | IT*                             |              | 68/71/8/9         | Low-Moderate         | ****                                |  |  |
| 26.01   | 58    | PCT                             |              | 71C74/71C75       | Low                  | 5                                   | 10-12  | Yes  |
| 26.02   | 97    | IT*                             | Dry #12      | 71C74/71C75       | Low                  | 10                                  | < 17   | Yes  |
| 26.03   | 35    | PCT                             |              | 71C74/71C75       | Low                  |                                     |  |  |
| 26.04   | 67    | IT*                             | Dry #11      | 71C74/71C75       | Low                  | < 12                                | < 19   | Yes  |
| 26.05   | 41    | PCT                             |              | 71C74/71C75       | Low-Moderate         | 8                                   | 13-15  | Yes  |
| 26.06   | 62    | IT*                             | Dry #11      | 71C74/71C75       | Low                  | 3-19**                              | 8-26   | No   |
| 26.07   | 3     | -                               | Dry #11      |                   | Low-Moderate         | < 10                                | < 17   | Yes  |

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit | Soil Mapping Unit         | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|--------------|---------------------------|----------------------|-------------------------------------|--|--|
| 26.08   | 10    | PCT                             |              | 71C74/71C75               | Low                  | < 13**                              | < 20   | Yes  |
| 26.09   | 94    | IT*                             | Dry #11      | 71C74/71C75               | Moderate             | < 10                                | < 17   | Yes  |
| 27.01   | 76    | IT*                             | Dry #10      | 71C75                     | Low-Moderate         | 10                                  | 15-17  | Yes  |
| 27.02   | 131   | IT*                             | Dry #13      | 71C75                     | Low                  | < 12                                | < 19   | Yes  |
| 27.03   | 99    | PCT                             |              | 71C74/71C75               | Low-Moderate         | 8                                   | 13-15  | Yes  |
| 27.04   | 92    | IT*                             | Dry #13      | 71C75/9                   | Low                  | 2                                   | 7-9  | Yes  |
| 27.05   | 37    | IT*                             | Dry #13      | 71C75/74C77               | Low                  | < 12                                | < 19   | Yes  |
| 27.06   | 44    | IT*                             |              | 71C74/71C75               | Low                  | < 10                                | < 17   | Yes  |
| 27.08   | 112   | IT*                             | Dry #13      | 71C74/71C75/74C77         | Low                  | < 10                                | < 17   | Yes  |
| 27.09   | 19    | JR                              |              | 71C75/74C77               | Low                  | < 10                                | < 17   | Yes  |
| 27.1    | 101   | CT*                             | Dry #14      | 71C75/74C77               | Low-Moderate         | 0                                   | 5-7  | Yes  |
| 27.11   | 45    | IT*                             | Dry #13      | 71C75                     | Low-Moderate         | 0                                   | 5-7  | Yes  |
| 27.12   | 108   | IT*                             | Dry #10      | 71C75                     | Low-Moderate         | 10                                  | 15-17  | Yes  |
| 27.13   | 12    | PCT                             |              | 71C75                     | Low-Moderate         | 9                                   | 14-16  | Yes  |
| 27.14   | 4     | PCT                             |              | 71C75                     | Low-Moderate         | 13***                               | 18-20  | Yes  |
| 27.15   | 5     | PCT                             |              | 71C75                     | Low-Moderate         | 13***                               | 18-20  | Yes  |
| 27.16   | 9     | JR                              |              | 71C75                     | Low-Moderate         | < 10                                | < 17   | Yes  |
| 28.01   | 12    | PCT                             |              | 71C75                     | Low-Moderate         | < 13                                | < 20   | Yes  |
| 28.02   | 64    | IT*                             | Dry #9       | 71C75/74                  | Low-Moderate         | < 10                                | < 17   | Yes  |
| 28.03   | 13    | PCT                             |              | 71C75                     | Low-Moderate         | < 10                                | < 17   | Yes  |
| 28.04   | 228   | IT*                             | Dry #8       | 71C75/74                  | Moderate             | < 10                                | < 17   | Yes  |
| 28.05   | 54    | IT*                             | Dry #9       | 71C75/74                  | Low                  | < 10                                | < 17   | Yes  |
| 29.01   | 126   | IT*                             | Dry #7       | 42C48/71C75/9             | Low                  | < 10                                | < 17   | Yes  |
| 29.02   | 42    | IT                              |              | 42C48/58/9                | Low-Moderate         | 11                                  | 16-18  | Yes  |
| 29.03   | 44    | IT*                             | Dry #7       | 42C48/58/9                | Moderate             | < 10                                | < 17   | Yes  |
| 30.01   | 334   | IT*                             | Dry #1       | 3/41C42/41C68/65C82/68C83 | Moderate             | < 10                                | < 17   | Yes  |
| 30.02   | 307   | IT*                             | Dry #2       | 3/42/65C82/68C83          | Moderate             | < 10                                | < 17   | Yes  |
| 30.03   | 253   | IT*                             | Dry #3       | 3/41/42/42C58/68C83       | Low-Moderate         | 13-19**                             | 18-26  | No   |

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit     | Soil Mapping Unit             | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|------------------|-------------------------------|----------------------|-------------------------------------|--|--|
| 30.05   | 185   | P&P*                            |                  | 3/42/65C82/68C83              | Moderate             | < 10                                | < 17   | Yes  |
| 30.06   | 120   | P&P*                            |                  | 41/41C42/42C48/42C58/43/68C83 | Moderate             | < 10                                | < 17   | Yes  |
| 31.01   | 172   | IT*                             | Dry #4           | 41/42C58                      | Moderate             | < 12                                | < 19   | Yes  |
| 31.02   | 49    | IT*                             | Dry #5           | 41/42                         | Low                  | < 13                                | < 20   | Yes  |
| 31.03   | 82    | IT*                             | Dry #6           | 42/42C58                      | Low-Moderate         | 10-13**                             | 15-20  | Yes  |
| 31.04   | 183   | IT*                             | Dry #6 & Mud #7  | 41C42/42/42C48/42C58/71C75    | Low                  | 30**                                | 35-37  | No   |
| 31.05   | 44    | P&P*                            |                  | 41C42/42                      | Low-Moderate         | ****                                |  |  |
| 31.06   | 85    | IT*                             | Mud #1           | 41/41C42/42                   | Low-Moderate         | < 12                                | < 19   | Yes  |
| 31.07   | 102   | P&P*                            |                  | 41/41C42/42/42C48             | Moderate             | < 12                                | < 19   | Yes  |
| 31.08   | 49    | IT*                             | Mud #12          | 41C42/42C48/71C75             | Moderate             | < 11                                | < 18   | Yes  |
| 31.09   | 80    | IT*                             | Mud #7           | 41C42/42C48/42C58             | Low                  | < 12                                | < 19   | Yes  |
| 31.1    | 164   | IT*                             | Dry #6 & Mud #11 | 41/42/42C48/42C58/71          | Moderate             | < 11                                | < 18   | Yes  |
| 31.11   | 12    | PCT                             |                  | 41C42/42                      |                      |                                     |  |  |
| 32.01   | 92    | CT*                             | Mud #3           | 3/41/42                       | Moderate             | 0                                   | 5-7  | Yes  |
| 32.02   | 125   | IT*                             | Mud #3 & Mud #4  | 3/41/42/47C85                 | Low                  | > 30                                | > 37   | No   |
| 32.03   | 2     | IT                              |                  | 41                            | Low                  | ****                                |  |  |
| 32.04   | 52    | CT*                             | Mud #5           | 41                            | Low                  | 3-4**                               | 8-11   | Yes  |
| 32.05   | 71    | IT*                             | Mud #5           | 41                            | Low                  | 3                                   | 8-10   | Yes  |
| 32.06   | 17    | IT*                             | Mud #3           | 41/42                         | Low-Moderate         | 2                                   | 7-9  | Yes  |
| 32.07   | 11    | IT*                             | Mud #2           | 42                            | Moderate             | 0                                   | 5-7  | Yes  |
| 32.08   | 87    | IT*                             | Mud #9           | 3/41/41C42/48                 | Moderate             | < 11                                | < 18   | Yes  |
| 32.09   | 217   | IT*                             | Mud #10          | 3/41C42/42C48/47C85/48/65/71  | Low                  | < 13                                | < 20   | Yes  |
| 32.1    | 59    | -                               |                  |                               |                      |                                     |  |  |
| 33.01   | 49    | IT*                             | Mud #12          | 42C48/71C75                   | Low                  | < 10                                | < 17   | Yes  |

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit    | Soil Mapping Unit         | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|-----------------|---------------------------|----------------------|-------------------------------------|--|--|
| 33.02   | 17    | IT*                             | Mud #12         | 41C42/42C48/71C75         | Moderate             | < 16                                | < 23   | No   |
| 33.03   | 59    | IT*                             | Mud #12         | 3/41C42/42C48             | Moderate             | < 10                                | < 17   | Yes  |
| 33.04   | 67    | PCT                             |                 | 3/41C42                   | Moderate             | 5**                                 | 10-12  | Yes  |
| 33.05   | 40    | PCT                             |                 | 42C48                     | Low-Moderate         | 3-9**                               | 8-16   | Yes  |
| 33.06   | 47    | IT*                             | Mud #12         | 41C42/42C48               | Low                  | 4                                   | 9-11   | Yes  |
| 33.07   | 44    | PCT                             |                 | 41C42/42C48               | Moderate             | 5**                                 | 10-12  | Yes  |
| 33.08   | 53    | IT*                             | Mud #11         | 41C42/42C48               | Moderate             | < 12                                | < 19   | Yes  |
| 33.09   | 47    | PCT                             |                 | 41C42/42C48               | Moderate             | 6                                   | 11-13  | Yes  |
| 33.1    | 74    | IT*                             | Mud #13         | 3/41C42/42C48             | Moderate             | 14                                  | 19-21  | No   |
| 33.11   | 54    | PCT                             |                 | 42C48                     | Moderate             | 6                                   | 11-13  | Yes  |
| 33.12   | 34    | IT*                             | Mud #14         | 42C48/75                  | Moderate             | < 10                                | < 17   | Yes  |
| 33.13   | 117   | IT*                             | Mud #14         | 42C48/65/75               | Moderate             | < 10                                | < 17   | Yes  |
| 33.14   | 60    | IT*                             | Mud #14         | 65                        | Low                  | < 13                                | < 20   | Yes  |
| 33.15   | 54    | IT*                             | Mud #14         | 65/75                     | Low                  | 11                                  | 16-18  | Yes  |
| 33.16   | 61    | IT*                             | Mud #14         | 3/65/75/9                 | Low                  | < 20                                | < 27   | No   |
| 33.18   | 146   | IT*                             | Mud #6 & Mud #8 | 41/41C42/42C48            | Moderate             | < 13                                | < 20   | Yes  |
| 33.19   | 61    | IT*                             | Mud #12         | 41C42/42C48               | Low-Moderate         | < 10                                | < 17   | Yes  |
| 33.2    | 80    | IT*                             | Mud #12         | 41C42/42C48               | Low                  | < 12                                | < 19   | Yes  |
| 34.01   | 166   | PCT                             |                 | 71/75                     | Low-Moderate         |                                     |  |  |
| 35.01   | 593   | PCT                             |                 | 3/44/44C85/48C82/71/81C82 | Low-Moderate         |                                     |  |  |
| 35.02   | 5     | JR                              |                 | 44/81C82                  | Low-Moderate         |                                     |  |  |
| 35.03   | 7     | JR                              |                 | 44C85/81C82               | Low-Moderate         |                                     |  |  |
| 35.04   | 7     | JR                              |                 | 44/81C82                  | Low-Moderate         |                                     |  |  |
| 35.05   | 3     | JR                              |                 | 81C82                     | Low-Moderate         |                                     |  |  |
| 36.01   | 119   | IT*                             | Curry IV #5     | 41C44/42/46C81/71         | Low-Moderate         | < 10                                | < 17   | Yes  |
| 36.02   | 68    | IT*                             | Curry IV #6     | 46C81/48/81C85            | Moderate             | < 10                                | < 17   | Yes  |
| 36.03   | 63    | IT*                             | Curry IV #6     | 41C81/46C47/46C81/48      | Moderate             | < 11                                | < 18   | Yes  |

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit              | Soil Mapping Unit          | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|---------------------------|----------------------------|----------------------|-------------------------------------|--|--|
| 36.04   | 25    | JR                              |                           | 41C81/46C47/46C81          | Low-Moderate         |                                     |  |  |
| 36.05   | 36    | IT*                             | Curry IV #5               | 46C47/46C81                | Low                  | < 11                                | < 18   | Yes  |
| 36.06   | 62    | IT*                             | Curry IV #5               | 41C44/41C81/46C47/46C81/71 | Moderate             | < 12                                | < 19   | Yes  |
| 36.07   | 46    | IT*                             | Curry IV #5               | 41C81/46C47/71             | Moderate             | < 12                                | < 19   | Yes  |
| 36.08   | 23    | IT*                             | Curry IV #2               | 41C46/41C81/46C47          | Low                  | < 13                                | < 20   | Yes  |
| 36.09   | 24    | PCT                             |                           | 41C46/41C81/46/46C47       | Low-Moderate         |                                     |  |  |
| 36.1    | 35    | IT*                             | Curry IV #5               | 41C81/46C47/71             | Low                  | < 12                                | < 19   | Yes  |
| 36.11   | 16    | IT*                             | Curry IV #5               | 41C81/46C47                | Moderate             | < 12                                | < 19   | Yes  |
| 36.12   | 25    | JR                              |                           | 41C81/46C47                | Low                  |                                     |  |  |
| 36.13   | 41    | IT*                             | Curry IV #3               | 41C46/41C81/46/46C47       | Low-Moderate         | < 12                                | < 19   | Yes  |
| 36.14   | 26    | IT*                             | Curry IV #3               | 1/41C46/46                 | Low                  | < 12                                | < 19   | Yes  |
| 36.15   | 51    | IT*                             | Curry IV #3               | 1/41/41C46/46C47           | Low-Moderate         | < 12                                | < 19   | Yes  |
| 36.16   | 15    | IT*                             | Curry IV #4               | 1/41C42                    | Moderate             | < 11                                | < 18   | Yes  |
| 36.17   | 28    | IT*                             | Curry IV #7               | 41C81/46/81C85             | Low                  | 3                                   | 8-10   | Yes  |
| 36.18   | 95    | IT*                             | Curry IV #8 & Curry IV #9 | 68/81C85                   | Low                  | 3-6**                               | 8-13   | Yes  |
| 36.19   | 87    | IT*                             | Curry IV #6               | 46C81/81C85                | Low-Moderate         | < 12                                | < 19   | Yes  |
| 36.2    | 70    | IT*                             | Curry IV #6               | 81C85                      | Moderate             | < 10                                | < 17   | Yes  |
| 36.21   | 22    | IT*                             | Curry IV #6               | 81C85                      | Moderate             | < 10                                | < 17   | Yes  |
| 37.01   | 36    | IT*                             | Mud #15                   | 42/65                      | Low                  | < 11                                | < 18   | Yes  |
| 37.02   | 82    | IT*                             | Mud #15                   | 65/71/74                   | Low                  | < 11                                | < 18   | Yes  |
| 38.01   | 51    | IT*                             | Curry IV #1               | 41C46/46C47/48C82/81C82    | Low                  | 7                                   | 12-14  | Yes  |
| 38.01a  | 15    | JR                              |                           |                            | Low                  |                                     |  |  |
| 38.02   | 19    | IT*                             | Curry IV #1               | 46C47/48C82                | Low                  | < 13                                | < 20   | Yes  |
| 38.03   | 6     | IT*                             | Curry IV #1               | 46C47/48C82                | Low                  | < 10                                | < 17   | Yes  |

| Stand # | Acres | Preferred Alternative Treatment | Harvest Unit | Soil Mapping Unit    | Subsoiling Potential | Existing Detrimental Conditions (%) | Detrimental Conditions (%) Expected After Implementation | Post Treatment Conditions Expected to Meet Standards |
|---------|-------|---------------------------------|--------------|----------------------|----------------------|-------------------------------------|--|--|
| 38.04   | 9     | JR                              |              | 46C47                | Low                  |                                     |  |  |
| 38.05   | 2     | JR                              |              | 41C46/46C47          | Low                  |                                     |  |  |
| 39.01   | 198   | PCT                             |              | 68/71/73/74/8        | Low-Moderate         |                                     |  |  |
| 40.01   | 468   | PCT                             |              | 7/71/74/87/9/9X      | Low                  |                                     |  |  |
| 41.01   | 258   | PCT                             |              | 7/71/73/74/8/87/9/9X | Low                  | < 11                                | < 18   | Yes  |
|         |       |                                 |              |                      |                      |                                     |  |  |

\* Following the primary treatment, the unit (or part of the unit) would be precommercial thinned. If a primary treatment is not economically viable than the unit would be precommercial thinned.

\*\* Two or more separate estimates were made on this stand.

\*\*\* Data does not account for % of unit in roads and landings. Assume at least an additional 2% in roads and landings.

\*\*\*\* No data for these stands.

Soils

The Soil Resource Inventory for the Malheur National Forest was consulted to determine what soils may be encountered within the project area. Soils and parameters of concerns are listed on the following table.

| Soil Unit | Erosion Potential | Cut slope Erosion Potential | Fill slope Erosion Potential | Road Surface Erosion Potential | Compaction Hazard  | Mixing and Displacement |
|-----------|-------------------|-----------------------------|------------------------------|--------------------------------|--------------------|-------------------------|
| 1         | L                 | L                           | L-M                          | L                              | H                  | L                       |
| 3         | L                 | L                           | L-M                          | L                              | H                  | L                       |
| 5         | L                 | M                           | M                            | M-H                            | L                  | H                       |
| 7         | H                 | N/R                         | L                            | M                              | L                  | M                       |
| 8         | H                 | M                           | M                            | M                              | L-M                | M                       |
| 9         | VH                | H                           | H                            | M                              | L                  | M                       |
| 41        | L-M               | L                           | M                            | M                              | M-H                | L-M                     |
| 42        | L-M               | L                           | M                            | M                              | L-M                | M                       |
| 43        | H                 | M                           | M                            | M                              | M-H                | L-M                     |
| 44        | H                 | L                           | L                            | L                              | L-M                | L-M                     |
| 46        | M                 | L                           | L                            | L                              | L-M                | L-M                     |
| 47        | M                 | N/R                         | L                            | L                              | L                  | L-M                     |
| 48        | H-VH              | M                           | M                            | M-H                            | L-M                | M                       |
| 58        | M                 | M                           | H                            | H                              | L                  | H                       |
| 65        | H-VH              | M                           | M                            | H                              | L                  | H                       |
| 68        | M-H               | M                           | M                            | M-H                            | L                  | M-H                     |
| 71        | L                 | L                           | M                            | M-H                            | L                  | M                       |
| 73        | H                 | L                           | L                            | L                              | L                  | M                       |
| 74        | M                 | L                           | L                            | L                              | L                  | M                       |
| 75        | M                 | M                           | M                            | M-H                            | L                  | M                       |
| 77        | L                 | N/R                         | L                            | L                              | L                  | L                       |
| 81        | L-M               | M                           | M                            | M                              | H                  | L                       |
| 82        | L-M               | M                           | M                            | M                              | Sur -L<br>Sub - H  | Sur - M<br>Sub - L      |
| 83        | M                 | M                           | H                            | M-H                            | Sur - L<br>Sub - H | Sur - H<br>Sub - L      |
| 85        | M                 | L                           | L                            | L-M                            | H                  | L                       |
| 87        | H                 | L                           | L                            | L-M                            | H                  | L                       |

L= Low, M = Moderate, H =High. VH = Very High, N/R = No Rating

Soils Constraints

Loamy and Clayey soils - any ground disturbance that removes the groundcover can cause unacceptable accelerated erosion.

Loamy soils - Minimize amount of disturbed area; maintain revegetation/erosion control measures current with operations. Soils in this group generally have southerly aspects, which can create excessively high surface soil temperatures if excessive amounts of vegetation and litter are removed. This can create regeneration and revegetation problems.

Clay soils - Avoid when wet, keep erosion control measures current.

Ash Soils - If the vegetative cover and litter are removed or broken up; and if water is then allowed to concentrate, excessive erosion can occur. Avoid when wet, keep erosion control measures current.

### Soils Definitions

Surface Soil Erosion Potential. This rating is based on expected losses of surface soil when all vegetative cover, including litter, is removed.

Low - Little or no loss of soil materials is expected. Some minor sheet and rill erosion may occur.

Moderate - Some loss of surface soil materials can be expected. Rill erosion and some small gullies or sheet erosion may occur. Sheet erosion is indicated by some soil pedestals and observable accumulation of soil materials along the upslope edge of rocks and debris. This is accompanied by a probable fertility loss.

High - Considerable loss of surface soil materials can be expected. Rill erosion, numerous small gullies or evidence that considerable loss from sheet erosion may occur. Sheet erosion is indicated by frequent occurrence of soil pedestals and considerable accumulation of soil materials along the upslope edge of rocks and debris. This is accompanied by a fertility loss.

Very High - Large loss of surface soil material can be expected in the form of large losses from sheet erosion, numerous small gullies and rills or large gullies. Sheet erosion loss is exhibited by numerous examples of soil pedestals and extensive accumulation of soil materials along the upslope edge of rocks and debris. This is accompanied by a fertility loss.

Cut Slope Erosion Potential. This rating predicts the potential of soils exposed in a road cut to erode without erosion control measures.

Low – Factors indicate little erosion is likely to occur.

Moderate – Factors indicate that a moderate amount of erosion can be expected.

High – Factors indicate that a large amount of erosion can be expected.



**Fill Slope Erosion Potential.** This rating predicts the potential of soil material on a fill slope to erode without erosion control measures.

Low – Factors indicate little erosion is likely to occur.

Moderate – Factors indicate that a moderate amount of erosion can be expected.

High – Factors indicate that a large amount of erosion can be expected.

**Road Surface Erosion Potential.** This rating predicts the erosion potential on unsurfaced roads with grades less than 10 percent.

Low – Factors indicate little erosion is likely to occur. Much of the road running surface is coarse rock fragments.

Moderate – Factors indicate that a moderate amount of erosion can be expected.

High – Factors indicate that a large amount of erosion can be expected. Most of the running surface is highly erodible soil material.

**Compaction Hazard.** This is a relative prediction of soil behavior under the physical influences of foot, hoof, vehicular, or log traffic. It is a combined rating of the length of time that a soil is at optimum moisture for compaction and the comparative force necessary to get compaction.

Low – Factors indicate that detrimental compaction will be a minor problem.

Moderate – Factors indicate that compaction will be a problem in the spring and early summer.

High – Factors indicate that compaction will be a problem for a large part of the spring and summer.

**Mixing and Displacement.** This interpretation rates the land type as to the ease with which its soil material can be loosened and moved after its vegetation and litter are removed. Mixing and displacement can be done by hoof, foot, vehicular, or log traffic.

Low – Factors indicate that these soils are not easy to loosen and/or dissipate.

Moderate – Factors indicate that these soils are moderately easy to loosen and dissipate.

High – Factors indicate that these soils are easy to loosen and/or dissipate.

#### General Land type Description of Each Soil Unit.

1 Typically occurs along stream bottoms and large springy areas. These areas remain wet throughout the year. These soils may have a surface peat layer or are high in organic matter and are generally more

than 36 inches deep. Soil textures include silt loams to clay loams, silty clay loams and some clays. Nebraska sedge, Ovalhead sedge and bentgrass are the dominant grass and sedges on this mapping unit.

3 Typically occurs along stream bottoms and other areas that are wet for a portion of the summer. These areas may or may not be sub-irrigated during the growing season. The surface soils are generally high in organic matter. Soil texture ranges from silt loams to loams to clay loams and some clays. Soil depth is greater than 24 inches. Dominant vegetation is Kentucky bluegrass and tufted hairgrass.

5 Typically occurs in areas that have an accumulation of recent volcanic ash in cold air settlement areas. These areas occur around meadow areas, in depression or basin-like areas, and along stream bottoms. Dominant vegetative types are lodgepole pine and grouse huckleberry, which are cold soil indicator species.

7 Generally occurs on slopes with a south aspect. Soil texture varies from loam to clay. Dominant vegetation consists of juniper, scattered ponderosa pine, big sagebrush, low sagebrush, mahogany, fescue, wheatgrass, and sandberg bluegrass.

8 Generally occurs on slopes with a south aspect. Bedrock is generally highly stratified and variable. Soil texture varies from loam to clay. Dominant vegetation consists of ponderosa pine, fescue, elk sedge, wheatgrass and sandberg bluegrass.

9 Occurs on slopes with a variable aspect. The soils generally have an 8 to 12 inch recent volcanic ash surface layer over a variety subsurface material. Bedrock is generally highly stratified and variable. Dominant vegetation is ponderosa pine, white fir, douglas fir, pinegrass and elk sedge.

41 Typically occurs on upland flats and side slopes with a southerly aspect. It supports ponderosa pine with a groundcover of elk grass, wheatgrass, fescue, and sandberg bluegrass.

42 Occurs on upland flats and side slopes. It supports ponderosa pine, douglas fir, and white fir with a groundcover of elk sedge and pinegrass.

43 Occurs on steep southerly facing side slopes. It supports ponderosa pine with a groundcover of elk sedge, wheatgrass, fescue, and sandberg bluegrass.

44 Occurs on steep side slopes. It supports juniper, mahogany and big sagebrush, with a groundcover of wheatgrass, fescue, and sandberg bluegrass.

46 Occurs on upland flats and side slopes. It supports juniper, mahogany, few ponderosa pine and big sagebrush with a groundcover of sandberg bluegrass and wheatgrass.

47 Occurs on upland flats and side slopes. It supports stiff and low sagebrush with a groundcover of wheatgrass and sandberg bluegrass.

48 Typically occurs on steep side slopes with variable aspect. It supports ponderosa pine, douglas fir and white fir with a groundcover of elk sedge and pinegrass.

58 Typically occurs on upland flats and side slopes with gradients less than 30 percent. It supports white fir, douglas fir, larch, and lodgepole pine with a groundcover of huckleberry, pinegrass, and Columbia brome.

65 Occurs on upland flats and side slopes. It supports ponderosa pine, douglas fir, and white fir with a groundcover of pinegrass and elk sedge.

68 Occurs on southerly facing upland flats and side slopes. It supports ponderosa pine with a groundcover of fescue, elk sedge, wheatgrass, and sandberg bluegrass.

71 Occurs on upland flats. It supports ponderosa pine and bitterbrush with a groundcover of ross sedge, elk sedge, fescue, and wheatgrass.

73 Occurs on steep exposed side slopes with a variable aspect. It supports juniper, mahogany, big sagebrush, scattered ponderosa pine and a of wheatgrass, fescue and sandberg bluegrass.

74 Occurs on upland flats. It supports juniper, mahogany, big sagebrush, scattered ponderosa pine and a groundcover of wheatgrass, fescue and sandberg bluegrass.

75 Occurs on upland flats. It supports ponderosa pine, douglas fir, white fir with a groundcover of elk sedge and pinegrass.

77 Occurs on upland flats. It supports low and stiff sagebrush and sandberg bluegrass.

81 Typically occurs on upland flats, side slopes, and toe slopes with slope gradients les than 30 percent. It supports ponderosa pine with a groundcover of fescue, elk sedge, and pinegrass.

82 Typically occurs on upland flats, side slopes, and toe slopes with gradients less than 30 percent. It supports ponderosa pine, douglas fir, and white fir with a groundcover of pinegrass and elk sedge.

83 Typically occurs on upland flats and northerly-facing side slopes with gradients less than 40 percent. It supports white fir, douglas fir, larch, and lodgepole pine with a groundcover of huckleberry, pinegrass, and Columbia brome.

85 Occurs on upland flats and side slopes. It supports juniper, scattered ponderosa pine, low sagebrush, fescue, wheatgrass, and sandberg bluegrass.

87 Typically occurs on steep side slopes with gradients of 30 to 70 percent. It supports juniper, scattered ponderosa pine, low sagebrush, fescue, wheatgrass, and Sandberg bluegrass.

## **SOIL DISTURBANCE ASSESSMENT**

### **Malheur National Forest**

Draft September 19, 2002

The objectives of this paper are: 1) Establish consistency in soil assessment methods on the Malheur National Forest and across the Blue Mountains (Wallowa-Whitman and Umatilla National Forests) and 2) Ensure compliance with the Forest's Land and Resource Management Plan and FSM (Forest Service Manual) 2520.3. Testing of this interim assessment protocol will occur during the next several months, with revisions made if necessary.

This protocol describes how to assess existing condition of soils in areas where proposed or current management activities have the potential to affect the soil resource, with emphasis on those areas receiving mechanical treatments. Summaries and interpretations of soil management direction in the Forest Land and Resource Management Plan and FSM 2500.98-1 are also given.

### **Background and Direction**

The Malheur and Ochoco National Forests Land and Resource Management Plans and FSM 2520.3 provide direction for the management of soils within activity areas. This direction is summarized below, with interpretations and recommendations.

*FSM 2520.3-1: Design new activities that do not exceed detrimental soil conditions on more than 20 percent of an activity area. (This includes the permanent transportation system.)*

Interpretation: Refers to proposed activities in areas that have not been managed or disturbed. New management activities cannot exceed detrimental soil conditions on more than 20 percent of an activity area.

Recommendation: Design activities that result in less than 20 percent detrimental soil disturbance.

*FSM 2520.3-2: In areas where less than 20 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effect of the current activity following project implementation and restoration must not exceed 20 percent.*

Interpretation: Refers to areas that have been managed in the past and show obvious signs of detrimental soil conditions. Activities that temporarily result in more than 20 percent detrimental soil conditions are allowed if restoration activities result in a net reduction in detrimental soil conditions back below 20 percent.

Recommendation: If restoration activities are required to meet soil quality standards, then site-specific prescriptions must be written by a qualified soil scientist (or other resource professional), based on evaluation of on-site soil conditions. Restoration prescriptions should be considered as part of an overall management strategy for the activity area(s). Emphasize long-term maintenance or improvement of soil quality in light of the resource needs and management objectives of the site.

*FSM 2520.3-3: In areas where more than 20 percent detrimental soil conditions exist from prior activities, the cumulative detrimental effects of project implementation, and restoration must, at a minimum, not exceed the conditions prior to the planned activity and should move toward a net improvement in soil quality.*

Interpretation: Refers to areas that have been impacted in the past and show obvious signs of detrimental soil conditions on more than 20 percent of the activity area. Activities that result in additional soil disturbance is allowed if restoration activities result in a net reduction in detrimental soil conditions, or at a minimum do not exceed the conditions prior to the activity. Management activities should not be precluded in activity areas that exceed the 20 percent standard.

Recommendation: If restoration activities are required to meet soil quality standards, then site specific prescriptions must be written by a qualified soil scientist (or other resource professional), based on evaluation of on-site soil conditions. Restoration prescriptions should be considered as part of an overall management strategy for the activity area. Emphasize long-term maintenance or improvement of soil quality in light of the resource needs and management objectives of the site. Restoration does not necessarily have to achieve a goal of 20% or less detrimental soil conditions.

*Forest Plan Standard: The total acreage of all detrimental soil conditions shall not exceed 20% of the total acreage within any activity area, including landings and system roads. Consider restoration treatments if detrimental conditions are present on 20% or more of the activity area. Detrimental soil conditions include compaction, puddling, displacement, and severely burned soil, and surface erosion.*

Interpretation: It is permissible to enter areas where detrimental soil conditions exceed 20 percent of the total acreage within the activity area. However, several stipulations must be met. First, an acceptable analysis of existing soil conditions needs to be made. This not only includes an assessment of soil disturbance, but also a determination of what kinds of soils exist within the activity area. Based on soil capability, site-specific restoration prescriptions can be developed. These should include an estimated timeline for achieving restoration objectives. The forest plan standard lacks specificity in terms of existing and proposed conditions, and is more general than the FSM direction.

Recommendation: Rely on the FSM for more specific direction.

The following is a short step-by-step summary of the current Soil Disturbance Assessment used by the Malheur National Forest.

| STEP | DESCRIPTION   |
|------|---|
| 1    | Obtain timber sale area maps or ortho/aerial photographs of the project area/watershed.   |
| 2    | <p>On the map or orthophoto's, stratify the planning area or watershed into areas having the highest probability of soil impacts exceeding 20% (high level of concern related to existing conditions) and areas thought to have impacts less than 20% (low level of concern related to existing conditions).</p> <ul style="list-style-type: none"> <li>• Use the District's activity (harvest and thinning) and/or Silvicultural Activity Tracking (SAT) GIS layers to aid in mapping "high level of concern" areas.</li> <li>• "High level of concern" areas can also be mapped by means of photo interpretation – look for changes in canopy density as well as on-the-ground impacts such as skid trail, landings, etc.</li> <li>• Digitize polygons to create a GIS layer.</li> </ul>  |
| 3    | Assess the potential for soil impacts based on proposed management activities and soil type (see Soil Resource Inventory). For instance, categorize potential impacts into low (e.g. helicopter or skyline), moderate (e.g. cut-to-length forwarding system), and high (e.g. skidding or machine piling).   |
| 4    | Prioritize units using the conceptual model shown in <a href="#">Attachment 2</a> . If time is available, sample all "high priority" areas and at least 15% of the "low and medium priority" areas (a minimum of 5 units sampled). If time is limited, randomly select 50% of the "high priority" units in each soil group with a minimum of 10 units being sampled.  |
| 5    | <p>Sample the appropriate units and categorize the soil conditions using the <i>Soil Class Disturbance Definitions</i> (<a href="#">Attachment 3</a>) and the <i>Soil Survey Data Forms</i> (<a href="#">Attachments 4</a>). When calculating the percentage of an activity area that contains detrimental soil conditions, use the percentage of points designated as Class 2 and Class 3. A soil scientist or other properly trained individual can complete the soil disturbance survey, however, a soil scientist will determine the sampling method. Do not sample non-forest inclusions. The following methods should be considered based on the quantity and quality of data desired.</p> <ul style="list-style-type: none"> <li>• <b>Statistical Point Sampling Method:</b> See Howes, S., Hazard, J., and Geist, J. 1983. Guidelines for Sampling Some Physical Conditions of Surface Soils. R6-RWM-146-1983, p. 5-6. Sampling intensity should be 5 20-point transects per 10 acres, all random. This is an average of 10 data points per acre.</li> <li>• <b>Random Points:</b> A minimum of 2 random data points per acre, with a minimum of 30 data points per analysis area.</li> <li>• <b>Transects:</b> A minimum of 1 transect across a representative section of an analysis area (this is not a statistical sample). From the beginning of the transect walk in a straight line sampling every 4-5 feet (1 pace). If possible, starting and ending points for each transect should be identified spatially with a GPS. Collect a minimum of 200 points along each transect. Record soil impacts at each sampling point based on Attachment 3. Definitions of compaction, displacement, erosion, puddling, and severely burned can be found in <a href="#">Attachment 1</a>. Find a "no impact" area to calibrate your foot/sharpsooter or penetrometer (e.g. under a large tree, etc.). Also, find an obvious skid trail or landing to get a feel for detrimental compaction.</li> </ul> |

## **Attachment 1**

### **Description of Detrimental Soil Conditions<sup>1</sup>**

**Detrimental Compaction** – An increase in soil bulk density of 20 percent, or more, over the undisturbed level for volcanic ash soils. For all other soils it is an increase in soil bulk density of 15 percent, or more, over the undisturbed level. Assess changes in compaction by sampling bulk density, macro porosity, or penetration resistance in the zone in which change in relatively long term and that is the principal root development zone. This zone is commonly between 4 to 12 inches in depth.

**Detrimental Displacement** – The removal of more than 50 percent of the topsoil or humus enriched A horizon from an area of 100 square feet, or more, which is at least 5 feet in width.

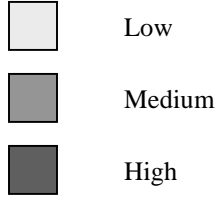
**Detrimental Puddling** – When the depth of ruts or imprints is 6 inches or more. Soil deformation and loss of structure are observable and usually bulk density is increased.

**Detrimental Surface Erosion** – Visual evidence of soil loss in areas greater than 100 square feet, rills or gullies and/or water quality degradation from sediment or nutrient enrichment.

**Detrimental Burned Soil** – Top layer of mineral soil has been significantly changed in color, oxidized to a reddish color, and the next one-half inch blackened from organic matter charring by heat conducted through the top layer. The detrimentally burned soil standard applies to an area greater than 100 square feet, which is at least 5 feet in width.

<sup>1</sup>FSM 2500 – Watershed and Air Management R-6 Supplement 2500-98-1

**Attachment 2**Unit Prioritization Model

|   |        | Level of Concern Related to Existing Conditions <sup>1</sup> |        |      | Priority for Unit Sampling (transects)<br><br> |
|---|--------|--|--------|------|---|
| Potential for Soil Impacts <sup>2</sup> |        | Low  | Medium | High |   |
|   | Low    |  |        |      |   |
|   | Medium |  |        |      |   |
|   | High   |  |        |      |   |

<sup>1</sup>Judgement call based on Step 2 of the Assessment

<sup>2</sup>Judgement call based on the potential for soil impacts



### Attachment 3

### Soil Disturbance Class Definitions

|  |  |
|--|--|
| <p><b>Class 0: Undisturbed Natural State.</b></p> <p><b>Soil surface:</b></p> <ul style="list-style-type: none"> <li>• No evidence of past equipment operation.</li> <li>• No depressions or wheel tracks evident.</li> <li>• Litter and duff layers present and intact.</li> <li>• No soil displacement evident.</li> </ul>   | <p><b>Class 1: Low Soil Disturbance</b></p> <p><b>Soil surface:</b></p> <ul style="list-style-type: none"> <li>• Faint wheel tracks or slight depressions evident (e.g. &lt;2" deep).</li> <li>• Litter and duff layers usually present and intact.</li> <li>• Surface soil has not been displaced.</li> <li>• Some evidence of burning impacts including a mosaic of charred and intact duff layer to partially consumed duff layer with blackened surface soil.</li> </ul> <p><b>Soil resistance to penetration with tile spade or probe:</b></p> <ul style="list-style-type: none"> <li>• Resistance of surface soils may be slightly greater than observed under natural conditions. Concentrated in top 0-4 inch depth.</li> </ul> <p><b>Observations of soil physical conditions:</b></p> <ul style="list-style-type: none"> <li>• Change in soil structure from crumb or granular structure to massive or platy structure, restricted to the surface 0-4 inches.</li> </ul>   |
| <p><b>Class 2: Moderate Disturbance</b></p> <p><b>Soil surface:</b></p> <ul style="list-style-type: none"> <li>• Wheel tracks or depressions evident (e.g. 2-6" deep).</li> <li>• Surface soil partially intact with minimal displacement (area must meet the size requirement).</li> </ul> <p><b>Soil resistance to penetration with tile spade or probe:</b></p> <ul style="list-style-type: none"> <li>• Increased resistance is present throughout top 4-12 inches of soil.</li> </ul> <p><b>Observations of soil physical conditions:</b></p> <ul style="list-style-type: none"> <li>• Change in soil structure from crumb or granular structure to massive or platy structure, restricted to the surface 4-12 inches.</li> <li>• Platy structure is generally continuous and holds together when shaken.</li> <li>• Large roots may penetrate the platy structure, but fine and medium roots may not.</li> </ul> | <p><b>Class 3: High Disturbance</b></p> <p><b>Soil surface:</b></p> <ul style="list-style-type: none"> <li>• Wheel tracks or depressions highly evident (e.g. &gt;6" deep)</li> <li>• Evidence of topsoil removal, gouging and piling.</li> <li>• Soil displacement has removed the <i>majority</i> of the surface soil. Subsoil partially or totally exposed.</li> <li>• Burning consumed duff layer, root crowns and surface roots of grasses. Evidence of severely burned soils (mineral surface soil red in color) in an area that meets the size requirement.</li> </ul> <p><b>Soil resistance to penetration with tile spade or probe:</b></p> <ul style="list-style-type: none"> <li>• Increased resistance is deep into the soil profile (&gt;12 inches).</li> </ul> <p><b>Observations of soil physical conditions:</b></p> <ul style="list-style-type: none"> <li>• Change in soil structure from granular structure to massive or platy structure extends beyond the top 12 inches of soil.</li> <li>• Platy structure is continuous.</li> <li>• Roots do not penetrate the platy structure.</li> </ul> |

## Attachment 4

### Soil Disturbance Transect Form

Project \_\_\_\_\_ Unit \_\_\_\_\_ Observer \_\_\_\_\_ Date \_\_\_\_\_ Survey Level \_\_\_\_\_  
 Approx. Years Since Last Skidding (Prev. Sale and Unit) \_\_\_\_\_ % in Roads and Landings \_\_\_\_\_

| Transect Number | Disturbance Class | Tally of Disturbance Class Observations Along Transect<br>(recommended procedure: minimum of 100 observations, multiple of 100 observations, and ### tally method ) | Percent | Comments |
|-----------------|-------------------|---|---------|----------|
|                 | 0                 |   |         |          |
|                 | 1                 |   |         |          |
|                 | 2                 |   |         |          |
|                 | 3                 |   |         |          |
|                 |                   |   | 100%    |          |
|                 | 0                 |   |         |          |
|                 | 1                 |   |         |          |
|                 | 2                 |   |         |          |
|                 | 3                 |   |         |          |
|                 |                   |   | 100%    |          |
|                 | 0                 |   |         |          |
|                 | 1                 |   |         |          |
|                 | 2                 |   |         |          |
|                 | 3                 |   |         |          |
|                 |                   |   | 100%    |          |

Comments:

**Attachment 4 (cont.) – Back of Form**  
**Soil Disturbance Transect Form**

Where are transects? (Describe and sketch map below)

Can & should existing skid trails be reused? If not, why not?

If it appears that the unit will be near 20% detrimental impacts, include notes on suitability of the soil for subsoiling in terms of depth, stoniness, and slope. ("Near 20%" = roads% + % increase this entry + existing%)  
(% increase this entry = 6% for logging + 2% for grapple piling) (existing% = "3"% + "2"%)

Note conditions that may call for special mitigations: steep slopes, scab inclusions, moist soil, draws

Do these transects appear representative of other parts of the unit?

General notes: (e.g. General character of existing impacts? What are "2" & "3" due to: displacement, compaction? Was there a lot of displacement? Any off-skid-trail disturbance visible? General character of soil? Is one part of unit hit harder than others?

